

WHAT IS CLAIMED IS:

1. An air-ventilator comprising:  
5 a main housing, having first and second air-compartments along which first and second air streams respectively flow;  
first and second air-moving devices for moving said first and second air streams respectively along said first and second air-compartments;  
a thermal exchanger providing thermal exchange between said first and second  
10 air streams without mixing of said air streams;  
an air filter disposed at the upstream end of one of said air-compartments; and  
an additional air-moving device disposed in series with one of said air moving devices and intermediate said thermal exchanger and said air filter, to provide additional power to move air from said air filter towards said thermal exchanger.

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2. An air-ventilator according to claim 1, wherein said first and second air-moving devices are respectively disposed in said first and second air-compartments, and wherein said additional air-moving device is disposed in said first air-compartment and includes means to substantially change the direction of  
20 movement of an air-stream moving through it.

3. An air-ventilator according to claim 2, wherein the air streams entering and leaving said additional air-moving device are substantially orthogonal to each other.

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4. An air-ventilator according to claim 2, wherein said first and second air-moving devices share a common rotational shaft, and the shaft of said additional air-moving device is substantially orthogonal to said common rotational shaft.

30 5. An air-ventilator according to claim 4, wherein said first, said second and said additional air-moving devices are disposed intermediate of said air filter and said thermal exchanger.

6. An air-ventilator according to claim 5, wherein said thermal exchanger is disposed at the downstream ends of said first and second air-compartments, and the upstream end of said thermal exchanger is generally opposite said air filter.

5 7. An air-ventilator according to claim 1, further including means to change the direction of movement of an air-stream leaving said additional air-moving device towards said thermal exchanger.

10 8. An air-ventilator according to claim 7, wherein the portion of said first air-compartment proximal to the downstream end of said additional air-moving device includes baffle means to cause substantial change of direction of movement of the air stream leaving said additional air moving device.

15 9. An air-ventilator according to claim 7, wherein the portion of said air-compartment interconnecting said additional air-moving device and said one of said air-moving devices that is in series with said additional air-moving device is configured to cause a substantial change of direction of movement of the air stream exiting from said additional air-moving device to move towards said thermal exchanger.

20 10. An air-ventilator comprising:  
a main housing having first and second enclosed air-compartments along which first and second air streams respectively flow;  
first and second air-moving devices for moving said first and second air  
25 streams respectively in said first and second air-compartments;  
a thermal exchanger providing means for thermal exchange between said first and second air streams without mixing of said air streams;  
an air filter disposed at the upstream end of one of said air-compartments;  
an additional air-moving device disposed in said first air-compartment in  
30 series between said air filter and said first air-moving device, said additional air-moving device including means to substantially change the direction of the air-stream moving through it.

11. An air-conditioner including an air-ventilator of claim 10, wherein said thermal exchanger is mounted and dismounted as a module for convenient maintenance.

5 12. An air-conditioner including air-ventilator of claim 10, wherein the air-stream entering and that leaving said additional air-moving device are substantially orthogonal to each other.

10 13. An air conditioner including an air-ventilator of claim 10, wherein said first, said second and said additional air-moving devices are disposed intermediate of said air filter and said thermal exchanger.